REMARKS

In the Official Action mailed on **February 23, 2004**, the Examiner reviewed claims 1-27. In the Examiner's opinion, claims 1, 3, 4, 7, 8, 10, 11, 13-15, 17, 18, and 21 are generic. Claims 2, 9, and 16 were rejected under 35 U.S.C. §112, first paragraph as failing to comply with the enablement requirement. Claims 5, 12, and 19 were rejected under 35 U.S.C. §112, first paragraph as failing to comply with the enablement requirement. Claims 6, 13, and 20 were rejected under 35 U.S.C. §112, first paragraph as failing to comply with the enablement requirement. Claims 1, 3, 4, 7, 8, 10, 11, 13-15, 17, 18, and 21 were rejected under 35 U.S.C. §102(e) as being anticipated by Corynen (USPub 2003/0167265, hereinafter "Corynen").

Examiner's Opinion

In the Examiner's opinion, claims 1, 3, 4, 7, 8, 10, 11, 13-15, 17, 18, and 21 are generic.

Applicant agrees with Examiner that the steps of "taking the first derivative of a function, setting it to zero, and solving for the variable will yield an optimum value (maybe maximum) as the respective function 'levels off' and has a gradient at that point of zero" is well known in the art. However, Applicant respectfully points out that claims 1, 3, 4, 7, 8, 10, 11, 13-15, 17, 18, and 21 apply to an **interval global optimization** process, which computes **guaranteed bounds** (using interval arithmetic) on a globally minimum value of a function. This is different than the prior art which uses non-interval techniques, which, unlike intervals, do not inherently compute upper and lower bounds on the globally minimum value.

Rejections under 35 U.S.C. §112, first paragraph

Claims 2, 9, and 16 were rejected as failing to comply with the enablement requirement.

Applicant has amended the specification at page 6, lines 1-9 to agree with claims 2, 9, and 16. These amendments find support in claims 2, 9, and 16, on page 14, lines 12-19, and in FIG. 6. No new matter has been added.

Claims 5, 12, and 19 were rejected as failing to comply with the enablement requirement.

Applicant has amended claims 5, 12, and 19 to agree with the exclusion enabled by the specification on page 7, lines 2-4. No new matter has been added.

Claims 6, 13, and 20 were rejected as failing to comply with the enablement requirement.

Applicant respectfully points out that Newton's method is classically defined as $x_2 = x_1 - f(x_1)/f'(x_1)$, where $f'(x)$ is the first derivative of $f(x)$. In the present invention, $J(x,X)$ is the derivative of the function f, and B is the inverse of $J(x,X)$. Therefore, the steps of the Newton method described in claims 6, 13, and 20 agree with the classical definition of Newton's method. Applicant has amended claims 5, 12, and 19 to remove the inconsistencies.

Rejections under 35 U.S.C. §102(e)

Independent claims 1, 8, and 15 were rejected as being anticipated by Corynen. Applicant respectfully points out that the system of Corynen **does not** include the concept of performing **interval operations** to bound computational errors (due to computer system rounding) and to carry measurement accuracy data through a series of computations.

In contrast, the present invention is primarily concerned with **performing interval operations** to bound computational errors due to computer system rounding and to carry measurement accuracy data through a series of computations (see FIG. 5 and page 12, line 13 to page 14, line 9 of the instant

application). Performing interval operations is beneficial because it bounds errors which are inherent in using numbers of finite length to represent an infinite range of real numbers, and because it allows the system to account for measurement accuracy for data provided by a user. There is nothing within Corynen, either explicit or implicit, which suggests performing interval operations.

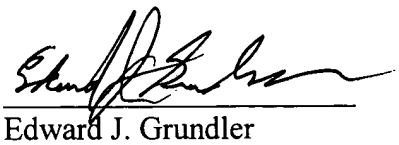
Accordingly, Applicant has amended independent claims 1, 8, and 15 to clarify that the present invention performs interval operations to bound computational errors due to computer system rounding and to carry measurement accuracy data through a series of computations. These amendments find support in FIG. 5 and on page 12, line 13 to page 14, line 9 of the instant application.

Hence, Applicant respectfully submits that independent claims 1, 8, and 15 as presently amended are in condition for allowance. Applicant also submits that claims 2-7, which depend upon claim 1, claims 9-14, which depend upon claim 8, and claims 16-21, which depend upon claim 15, are for the same reasons in condition for allowance and for reasons of the unique combinations recited in such claims.

CONCLUSION

It is submitted that the present application is presently in form for allowance. Such action is respectfully requested.

Respectfully submitted,

By 

Edward J. Grundler
Registration No. 47,615

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Edward J. Grundler
PARK, VAUGHAN & FLEMING LLP
508 Second Street, Suite 201
Davis, CA 95616-4692
Tel: (530) 759-1663
FAX: (530) 759-1665